AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for analyzing pressure-signals derivable from pressure measurements on or in a body of a human being or animal, comprising the steps of sampling said signals at specific intervals, and converting the pressure-signals into pressure related digital data with a time reference,

wherein for selectable time sequences the method comprises the further steps of:

a) identifying from said digital data the single pressure waves in said pressure-signals,

b) computing single pressure wave related parameters of said single pressure waves, selected from:

- amplitude,
- latency, and
- rise time coefficient,

c) identifying numbers of single pressure waves with pre-selected parameter values of such waves with respect to said parameters such as amplitude, latency and rise time coefficient,

d) performing a plotting operation based on at least one of:

d1) plotting the numbers of occurrences of single pressure waves with pre-selected values of amplitude and latency in a first matrix, determining balanced position of amplitude and latency combinations in said first matrix, and presenting the balanced positions obtained as numerical values or as related to weighted values, and

d2) plotting the numbers of occurrences of single pressure waves with pre-selected values of rise time coefficients in a second matrix, determining balanced positions of rise time coefficients in said second matrix, and presenting the balanced positions obtained as numerical values or as related to weighted values.

2. (Previously Presented) A method according to claim 1, wherein said method is applied to continuous pressure-signals during said selectable time sequences.

3. (Previously Presented) A method according to claim 2, wherein said selectable time sequences lies in the range 5 -15 seconds.

4. (Original) A method according to claim 2 or 3, wherein single pressure waves occurring between two time sequences are included in one or the other of said two time sequences according to pre-selected criteria.

5. (Previously Presented) A method according to claim 2, wherein a continuous series of said selectable time sequences constitutes a continuous pressure recording period.

6. (Previously Presented) A method according to claim 5, wherein any of said selectable time sequences are accepted or rejected for further analysis according to selected criteria.

7. (Original) A method according to claim 1, comprising the further steps of applying the method to all continuous pressure-signals for each of said time sequences in a continuous series of said time sequences during a continuous measurement period.

8. (Original) A method according to claim 1, wherein said identifying step includes determination of all minimum (valleys) and maximum (peak) pressure values in said signal.

9. (Original) A method according to claim 1, wherein said identifying step of single pressure waves relates to identifying a minimum pressure value (P_{min}) related to a diastolic minimum value and a maximum pressure value (P_{max}) related to a systolic maximum value of said single pressure wave.

10. (Original) A method according to claim 1, wherein said identifying step of single pressure waves includes determination of a minimum-maximum (P_{min}/P_{max}) pair of said single pressure wave.

11. (Original) A method according to claim 1, wherein said identifying step includes determining at least one of the single pressure wave parameters related to correct minimum-maximum pressure (P_{min}/P_{max}) pairs, said parameters selected from the group of: amplitude (ΔP), latency (ΔT), and rise time coefficient ($\Delta P/\Delta T$).

12. (Original) A method according to claim 1, wherein said single pressure wave amplitude relates to pressure amplitude = ΔP = systolic maximum value (P_{max}) - diastolic minimum value (P_{min}).

13. (Original) A method according to claim 1, wherein said single pressure wave latency relates to time latency = ΔT = time sequence wherein pressures increases from diastolic minimum pressure (P_{min}) to systolic maximum pressure (P_{max}).

14. (Original) A method according to claim 1, wherein said single pressure rise time coefficient relates to the relationship $\Delta P/\Delta T$ between amplitude ΔP and latency ΔT.

15. (Original) A method according to claim 1, wherein said identifying step includes exclusion of minimum-maximum pressure (P_{min}/P_{max}) pairs with either amplitude (ΔP), latency (ΔT) or rise time coefficient ($\Delta P/\Delta T$) values outside pre-selected thresholds.

16. (Original) A method according to claim 1, wherein said single pressure wave parameters elected from the group of: amplitude (ΔP), latency (ΔT) and rise time coefficients ($\Delta P/\Delta T$) are relative values only and independent of any zero pressure level.

17. (Original) A method according to claim 9, wherein said systolic maximum pressure value (P_{max}) is one of three peak values occurring in said single pressure wave.

18. (Original) A method according to claim 17, wherein

- a first (P1) of said three peak values in said single pressure wave has an amplitude related to the top of the percussion wave,

- a second (P2) of said three peak values has an amplitude related to a tidal wave portion of said single pressure wave, and

- a third (P3) of said three peak values has an amplitude related a dichrotic wave portion of said single pressure wave.

19. (Original) A method according to claim 17 or 18 further comprising the step of calculating one or more rise time coefficients $\Delta P/\Delta T$ based on a ratio between said amplitude and latency values.

20. (Previously Presented) A method according to claim 1, wherein step b further includes a parameter of absolute mean pressure and step c includes a parameter of absolute mean pressure, and wherein absolute mean pressure for each individual of said single pressure waves relates to mean pressure during the time of the pressure waveform, i.e. from diastolic minimum pressure (P_{min}) to diastolic minimum pressure (P_{min}).

21. (Original) A method according to claim 20, wherein mean pressure for an individual single pressure wave is the sum of pressure levels within said pressure wave divided by numbers of pressure samples.

22. (Original) A method according to claim 20, wherein mean pressure for an individual single pressure wave is the area under a curve (AUC) for said single pressure wave.

23. (Previously Presented) A method according to claim 1, wherein step b further includes a parameter of absolute mean pressure and step c includes a parameter of absolute mean pressure, and wherein absolute mean pressure for a selectable time sequence is the sum of absolute mean pressure (wavelength P_{min} -P_{min}) for all individual single pressure waves during said time sequence divided by the numbers of single pressure waves within said identical time sequence.

24. (Previously Presented) A method according to claim 1, wherein step b further includes parameter of absolute mean pressure and step c includes a parameter of absolute mean pressure, and wherein absolute mean pressure of single pressure waves relates to absolute pressure relative to atmospheric pressure.

25. (Original) A method according to claim 1, wherein single pressure waves are rejected when absolute pressure values of single pressure wave diastolic minimum pressure (P_{min}) and systolic maximum pressure (P_{max}) of said single waves are outside selected threshold values.

26. (Previously Presented) A method according to claim 1, wherein heart rate during said time sequence is equal to numbers of single pressure waves during a time sequence divided by the duration of said time sequence.

27. (Previously Presented) A method according to claim 1, wherein heart rate during said time sequence is equal to numbers of single pressure waves during a time sequence divided by the sum of wavelengths (P_{min} - P_{min}) for all of said individual single pressure waves during said time sequence.

28. (Original) A method according to claim 1, wherein a time sequence of pressure recordings is accepted or rejected according to single pressure wave related parameters within said time sequence.

29. (Original) A method according to claim 28, wherein said time sequence is of a duration in the range 5 - 15 seconds.

30. (Original) A method according to claim 28, wherein a time sequence is rejected when standard deviation of absolute pressures of minimum/maximum (P_{min}/P_{max}) pair values of said single pressure waves is outside selected threshold values.

31. (Original) A method according to claim 28, wherein a time sequence is rejected when standard deviation of one or more of single pressure wave parameters selected from the group of: amplitude (ΔP), latency (ΔT) and rise time coefficient ($\Delta P/\Delta T$) is outside selected threshold values.

32. (Original) A method according to claim 28, wherein a time sequence is rejected when the number of single pressure waves within said time sequence is outside a selected threshold value.

33. (Original) A method according to claim 28, wherein a time sequence is rejected when single pressure wave derived heart rate for said time sequence is outside a selected threshold value.

34. (Original) A method according to claim 28, wherein a time sequence is rejected when the number of single pressure waves for said time sequence deviates outside selected values, as compared to the number of single pressure waves derived from another pressure recorded during identical time sequence with identical time reference.

35. (Original) A method according to claim 28, wherein a time sequence is rejected when single pressure wave derived heart rate for said time sequence deviates outside selected values, as compared to single pressure wave derived heart rate from another pressure recorded during identical time sequence with identical time reference.

36. (Original) A method according to claim 28, wherein a time sequence is rejected when single pressure wave derived heart rate for said time sequence deviates outside selected values, as compared to heart rate derived from other source.

37. (Original) A method according to claim 36, wherein said other source is pulse oxymetry or electrocardiography.

38. (Original) A method according to anyone of claims 28 -37, wherein said rejection or acceptance of time sequences is performed repeatedly during ongoing pressure measurements.

39. (Original) A method according to anyone of claims 28 - 37, wherein a log is made for accepted and rejected time sequences during a recording period.

40. (Currently Amended) A method according to claim 1, comprising the further step of creating ~~a matrix~~at least one of said first and second matrices based on determination of a number of single pressure waves with pre-selected values related to one or more single pressure wave related parameters, and indicating for each matrix cell at respective intersections in at least one of said first ~~and/or~~and second ~~matrix~~ matrices the number of occurrence of matches between specific parameters of said single pressure waves.

41. (Currently Amended) A method according to claim 40, wherein ~~a matrix~~said first matrix is created based on determining numbers of single pressure waves with pre-selected values related to amplitude (ΔP) and latency (ΔT), wherein one axis of ~~the~~ said first matrix is related to an array of pre-selected values of pressure amplitude (ΔP), wherein the other axis in said first matrix is related to an array of pre-selected latencies (ΔT), and wherein indicating for each matrix cell at respective intersections in said first matrix a number of occurrence of matches

between a specific pressure amplitude (ΔP) and a specific latency (ΔT) related to successive measurements of single pressure waves over said time sequence.

42. (Currently Amended) A method according to claim 40, wherein ~~a matrix~~said second matrix is created based on determining numbers of single pressure waves with pre-selected values related to rise time coefficient ($\Delta P/\Delta T$), wherein one axis of ~~the~~ said second matrix is related to an array of pre-selected values of rise time coefficient ($\Delta P/\Delta T$), and wherein each cell in said second matrix there is indicated occurrence of pre-selected rise time coefficients ($\Delta P/\Delta T$) related to successive measurements of single pressure waves over said ~~tune~~ time sequence.

43. (Original) A method according to claim 40, wherein the single pressure wave parameters are categorized into groups, said groups reflecting ranges of said single wave parameter values.

44. (Currently Amended) A method according to anyone of claims 40 - 43, wherein reiterated updating of said ~~matrix~~ at least one of said first and second matrices is made during said time sequence and during ongoing measurements taken within a measurement period.

45. (Original) A method according to claim 44, wherein said reiterated updating occurs in a time range of every 5 -15 seconds.

46. (Currently Amended) A method according to claim 40, wherein said ~~matrixes~~ at least one of said first and second matrices are computed for each consecutive time sequence in a series of repeated time sequences.

47. (Currently Amended) A method according to claim 40, wherein the occurrence of matches in said ~~matrix~~ at least of said first and second matrices is indicated through actual number or standardisation based number of matches during the specific measurement period.

48. (Previously Presented) A method according to claim 40, wherein the occurrence of matches is indicated through percentage of matches during the specific measurement period.

49. (Previously Presented) A method according to claim 40, wherein said standardisation of said numbers or percentages of occurrence of matches is a function of the length of the specific measurement period.

50. (Original) A method according to claim 47, wherein said standardisation is related to wavelength of a single pressure wave (heart rate).

51. (Original) A method according to claim 1, comprising the further step of computing balanced position for a number of occurrences of said single pressure wave amplitude (ΔP) and latency (ΔT) values in said first matrix.

52. (Original) A method according to claim 51, wherein balanced position of said first matrix of numbers of amplitude (ΔP) and latency (ΔT) combinations relates to mean frequency distribution of amplitude (ΔP) and latency (ΔT) combinations during said time sequence.

53. (Original) A method according to claim 1, wherein balanced position is computed for number of occurrences of said single pressure wave rise time coefficient ($\Delta P/\Delta T$) values in said second matrix.

54. (Original) A method according to claim 53, wherein said balanced position of said second matrix numbers of rise time coefficient ($\Delta P/\Delta T$) relates to mean frequency distribution of rise time coefficients ($\Delta P/\Delta T$) during said selected time sequence.

55. (Previously Presented) A method according to claim 51, wherein reiterated computation of said matrix balanced position within said time sequence is made during ongoing measurements taken over a measurement period.

56. (Previously Presented) A method according to claim 51, wherein a new matrix balanced position is computed for each time sequence in a consecutive series of said time sequences during ongoing measurements taken over a measurement period.

57. (Previously Presented) A method according to claim 55, wherein said reiterated updating is made in a time range of every 5-15 seconds.

58. (Previously Presented) A method according to claim 51, wherein balanced position of numbers of occurrences in said first or second matrix is presented as numerical values or as weighted values.

59. (Currently Amended) A method according to claim 1, wherein step b further includes a parameter of absolute mean pressure and step c includes a parameter of absolute mean pressure, and wherein the method further comprising the steps of:

storing said single pressure wave related digital data in a database,

relating said set of digital data to a given time sequence,

relating said set of digital data to individual time sequences in a continuous series of said time sequences.

60. (Previously Presented) A method according to claim 59, wherein said single pressure wave related digital data stored in said database include at least one of the following feature items:

- a) absolute pressure values for diastolic minimum pressure (P_{min}) value of each accepted P_{min}/P_{max} pair within said time sequence,

- b) absolute pressure values for systolic maximum pressure (P_{max}) value of each accepted P_{min}/P_{max} pair within said time sequence,

- c) absolute mean pressure for each individual single pressure wave, that is mean pressure from P_{min} to P_{min} (wavelength) of each individual single pressure wave within said time sequence,

- d) relative amplitude (ΔP) pressure value for each individual single pressure wave within said time sequence,

- e) relative latency (ΔT) value for each individual single pressure wave within said time sequence,

- f) relative rise time coefficient ($\Delta P/\Delta T$) for each individual single pressure; wave within said time sequence,

- g) number of single pressure waves within said time sequence,

- h) single pressure wave derived heart rate, computed as number of single pressure waves divided by the total duration of wavelengths (P_{min} to P_{min}) of single pressure waves within said time sequence,

- i) single pressure wave derived heart rate, computed as number of single pressure waves divided by the duration of said time sequence wherein said single pressure waves occur,

- j) mean of absolute mean pressure value for all individual single pressure waves (wavelength P_{min} - $P_{min,}$) occurring within said time sequence, computed as the sum of absolute mean pressure (wavelength P_{min} - P_{min}) for all individual single waves during said time sequence, divided by numbers of single pressure waves within said time sequence,

- k) standard deviation for absolute mean pressure values of all individual single ~~30~~ pressure waves within said time sequence,

- l) standard deviation for diastolic minimum pressure (P_{min}) values of all individual single waves within said time sequence,

- m) standard deviation for systolic maximum pressure (P_{max}) values of all individual single waves within said time sequence,

- n) standard deviation for pressure amplitude (ΔP) values for all individual single pressure waves within said time sequence,

- o) standard deviation for relative latency (ΔT) values of all individual single pressure waves within said time sequence,

- p) standard deviation for relative rise time coefficient ($\Delta P/\Delta T$) values of all individual single pressure waves within said time sequence,

- q) balanced position of amplitude (ΔP)/latency (ΔT) combinations within said first matrix of combinations of single pressure wave amplitude (ΔP) and latency (ΔT) values within said time sequence, and

- r) balanced position of rise-time coefficients ($\Delta P/\Delta T$) within said second matrix of single pressure wave rise-time coefficients ($\Delta P/\Delta T$) within said time sequence.

61. (Original) A method according to claim 60, wherein said time sequence is in the range of 5 - 15 seconds.

62. (Original) A method according to claim 60, wherein the method further comprises the steps of:

- storing said single pressure wave related digital pressure data on a computer readable medium, and

- providing graphical presentations and statistical analysis of differences or relationships within or between any of said single pressure wave related digital pressure data.

63. (Previously Presented) A method according to claim 59, wherein differences or relationships between any of the single pressure wave related digital pressure data stored in said database are analyzed statistically.

64. (Previously Presented) A method according to claim 59, wherein said statistical analysis includes plotting of differences of values of said single wave parameters between different pressures with identical time sequence and identical time reference.

65. (Original) A method according to claim 64, wherein said differences relate to differences of absolute mean pressure between different pressures with identical time sequences and identical time reference.

66. (Original) A method according to claim 64, wherein said differences relate to differences of balanced position of amplitude (ΔP) between different pressures with identical time sequences and identical time reference.

67. (Original) A method according to claim 64, wherein said differences relate to differences of balanced position of latency (ΔT) between different pressures with identical time sequences and identical time reference.

68. (Original) A method according to claim 64, wherein said differences relate to differences of rise time coefficients between different pressures with identical time sequences and identical time reference.

69. (Previously Presented) A method according to claim 62, wherein said statistical analysis includes plotting of single wave parameters in scatter plots wherein each axis refers to one or said single pressure wave parameters.

70. (Previously Presented) A method according to claim 59, wherein absolute mean pressure during said time sequence is related to balanced position of amplitude (ΔP) during said identical time sequence.

71. (Previously Presented) A method according to claim 59, wherein absolute mean pressure during said time sequence is related to balanced position of latency (ΔT) during said identical time sequence.

72. (Previously Presented) A method according to claim 59, wherein balanced position of amplitude (ΔP) during said time sequence is related to balanced position of latency (ΔT) during said identical time sequence.

73. (Previously Presented) A method according to claim 63, wherein a best fitted curve or equation is established for any relationships of said single pressure wave related parameters.

74. (Original) A method according to claim 73, wherein the best fitted curve or equation relates to ranges for said single pressure wave related parameters.

75. (Previously Presented) A method according to claim 1, wherein a best fitted curve or equation is made on the basis of individual pressure measurements, said individual pressure measurements being built up of a continuous series of said time sequences.

76. (Previously Presented) A method according to claim 1, wherein a total best fitted curve or equation is made on the basis of two or more of said individual pressure measurements.

77. (Previously Presented) A method according to claim 75 or 76, wherein a mean type of best fitted curve or equations is made from two or more of said individual pressure measurements.

78. (Previously Presented) A method according to claim 74, wherein said individual pressure measurements are included in determining said total best fitted curve or equation according to selectable criteria, said selectable criteria related to distribution of single pressure wave related parameters within said individual pressure measurement.

79. (Previously Presented) A method according to claim 1, wherein best fitted equations for different single pressure wave parameter relationships are combined.

80. (Previously Presented) A method according to claim 79, wherein one single pressure wave related parameter is determined as a function of two or more other single pressure wave related parameters.

81. (Previously Presented) A method according to claim 1, wherein mean pressure for an individual time sequence is determined as a function of balanced position of amplitude and latency within said identical time sequence.

82. (Currently Amended) A method according to anyone of claims 1, and 59 and 60, wherein step b further includes a parameter of absolute mean pressure and step c includes a parameter of absolute mean pressure, and wherein the method further comprising the steps of giving weights to the cells of ~~a matrix~~at least one of said first and second matrices of single pressure wave related parameters, said weights determined by relationships between said single pressure wave related parameters.

83. (Currently Amended) A method according to claim 82, wherein the method further comprises the steps of:

creating ~~a matrix~~at least one or said first and second matrices based on single pressure wave related digital data,

indicating at each cell at respective intersections in said ~~matrix~~ at least one or said first and second matrices number of occurrence of matches between specific parameters of said single pressure waves, weighting each cell in said ~~matrix~~ at least one or said first and second matrices to give a weighted value,

said weighting comprising the steps of:

- computing for individual pressure recordings relationships between single pressure wave parameters including the single pressure wave parameters represented in said ~~matrix~~at least one or said first and second matrices,

- computing for a plurality of individual pressure recordings relationships between single pressure wave parameters including the single wave parameters represented in said ~~matrix~~at least one or said first and second matrices,

- computing an equation in which the weighted value is a function of the single wave parameters included in ~~the matrix~~said at least one or said first and second matrices,

- providing each cell in said ~~matrix~~ at least one or said first and second matrices with a weighted value according to said equation, the input values in said equation being the column and row group midpoints of said ~~matrix~~at least one or said first and second matrices, and

- presenting any occurrence of matches between specific parameters of said single pressure waves within a particular matrix cell as the weighted value of said matrix cell.

84. (Currently Amended) A method according to claim 83, comprising the further steps of:

creating ~~a matrix~~ said first matrix based on determining number of single pressure waves with pre-selected values related to amplitude (ΔP) and latency (ΔT), one axis of ~~the~~ said first matrix, being related to an array of pre-selected values of pressure amplitude (ΔP), and the other axis being related to an array of pre-selected latencies (ΔT),

indicating at each cell at respective intersections in said first matrix number of occurrence of matches between specific combinations of single pressure wave amplitude (ΔP) and latency (ΔT) related to successive measurements of single pressure waves within a time sequence, and weighting each cell in said first matrix to provide a weighted value related to mean pressure during said time sequence,

said weighting of the matrix cells comprising the steps of:

- computing for individual pressure recordings or a plurality of individual pressure recordings the best fitted equation for a relationship between absolute mean pressure and balanced position of single pressure wave amplitude (ΔP) within said time sequences,

- computing for individual pressure recordings or a plurality of individual pressure recordings the best fitted equation for a relationship between balanced position of single pressure wave amplitude (ΔP) and balanced position of single pressure wave latency (ΔT) within said time sequences,

- computing for individual pressure recordings or a plurality of individual pressure recordings the best fitted equation for the relationship between absolute mean pressure, and balanced position of single pressure wave amplitude (ΔP) and balanced position of single pressure wave latency (ΔT) within said time sequences,

- computing for individual pressure recordings or a plurality of individual pressure recordings an equation for the relationship between absolute mean pressure as a function of balanced position of single pressure wave amplitude (ΔP) and balanced position of single pressure wave latency (ΔT) within said time sequences,

- computing for each cell in said matrix a mean pressure value derivable from the equation in which mean pressure is a function of balanced position of single pressure wave amplitude (ΔP) and balanced position of single pressure wave latency (ΔT) within said time sequences,

said amplitude (ΔP) and latency (ΔT) values put into the equation being made according to selected criteria, such as the midpoint of the amplitude (ΔP) and latency (ΔT) group values,

and

- reiterating the step of determining weighted scale values for all cells within said first matrix.

85. (Original) A method according to claim 84, wherein said criteria is midpoint of the amplitude (ΔP) and latency (ΔT) group values.

86. (Previously Presented) A method according to claim 83, wherein matrix cells are given a value represented as a function of parameters of the matrix columns and rows.

87. (Currently Amended) A method according to claim 83, wherein all matrix cells of an amplitude (ΔP)/latency (ΔT) matrix being said first matrix are represented by mean pressure values, said mean pressure values being a function of balanced positions of amplitude (ΔP) and latency (ΔT) values, said mean pressure values termed predicted mean pressure.

88. (Currently Amended) A method according to claim 83, wherein matrix cells of an amplitude (ΔP)/latency (ΔT) matrix being said first matrix are represented by selected colors corresponding to the mean pressure values of said first matrix cells.

89. (Currently Amended) A method according to claim 83, wherein the two-dimensional balanced position of amplitude (ΔP) and latency (ΔT) within a given time sequence is represented by a one-dimensional weight ~~scale number~~value.

90. (Original) A method according to claim 55, further wherein reiterated updates of balanced positions of amplitude and latency values correspond to reiterated updates of a weighted number of said balanced positions, and wherein the weighted values are the mean pressure values termed predicted mean pressure values.

91. (Currently Amended) A method according to claim 55, further wherein reiterated updates of balanced positions of amplitude and latency combinations as weighted numbers are made against time, said balanced position being plotted as ~~weighted scale~~weight value number against time in a trend plot during ongoing pressure measurements.

92. (Previously Presented) A method according to claim 55, further wherein reiterated updates of balanced positions of amplitude and latency combinations as weight numbers during said time sequence are presented as weighted values and presented in a histogram.

93. (Previously Presented) A method according to claim 1, wherein said analysis of pressure-signals is related to human or animal body pressure elected from one or more of: intracranial pressure, arterial blood pressure, cerebrospinal fluid pressure, cerebral perfusion pressure, ocular pressure, gastrointestinal pressure, urinary tract pressure, or any type of soft tissue pressure.

Claims 94-177 (Cancelled)